



2023 Eastern Shore Agricultural Conference & Trade Show

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IT'S THE
MOST
Wonderful
Time OF
THE Year

Mark your calendars for January 25th & 26th, 2023 for the 33rd Annual Eastern Shore Agricultural Conference & Trade Show. The ES Ag Conference Planning Committee is working hard to have a great program. If there are any pertinent topics that you think would benefit the program, please feel free to share your ideas with your County Agent. We extend heartfelt thanks to our vendors and sponsors as their contributions make this event possible each year. We encourage you to share sponsorship and exhibitor information with any agribusinesses you'd like to see at the Ag Conference this year.



Sponsorship/Exhibit Space: <https://tinyurl.com/VCE-ES-AG-SPONSOR-2023>

Oyster Roast: <https://tinyurl.com/VCE-ES-AG-TICKETS-2023>

An exciting new addition to the program this year is a cash bar "Meet and Greet Happy Hour" at the Exmore Moose Lodge on January 25th from 3:30pm-5:45pm. Please come and enjoy the camaraderie among vendors and conference attendees while waiting for the Oyster Roast to begin. Our new Extension Specialists at the ESAREC will be in attendance and we encourage you to introduce yourself and learn a little more about them.

Another new addition to the ES Ag Conference this year, we are partnering with the Eastern Shore Farm Bureau Young Farmers to host a consignment auction the afternoon of January 26th beginning at 1:30 pm. The Auction will be held at the Moose Lodge and will focus on farm equipment and tools. Proceeds will benefit local educational programming organized by The Accomack and Northampton Extension Offices and Farm Bureau's Ag in the Classroom. If you would like to donate or consign with the Young Farmers, please contact Patrick Long at 757-999-0589.

If you have any questions about the ES Agricultural Conference, please contact your County Agent.



ANR Agents Corner



Private Pesticide Recertification

Private Pesticide Recertification was held at the Eastern Shore AREC on November 30th. We re-certified 23 private pesticide applicators in a Jeopardy format recertification where applicators were asked to participate in a “game show” format to provide an interactive and engaging recertification opportunity.

Plastic Pesticide Recycling

For 2022/2023, Ag Plastic Solutions will be the contractor for the recycling program. Containers are no longer granulated on site, rather, they are picked up and transported to a processing center. Ag Plastic Solutions will be providing us with a tentative route and estimated dates for the collection on the Eastern Shore. A week prior to the collection we will be given a three day window for the pick up of the plastic pesticide containers. Please take a look around the farm, triple rinse any pesticide containers and remove the caps and labels. You can take any jugs for recycling to Nutrien’s Keller office or to the Northampton County Landfill.

As a reminder, **only properly triple rinsed pesticide containers will be accepted**. Ag Plastic Solutions will gladly take fully and properly triple-rinse containers but can NOT take dirty containers. Please see the [pesticide container inspection checklist](#) for more information on how clean these jugs need to be in order to be recycled.

Hydroponics Lab

Northampton County Cooperative Extension hosted a 4-week Hydroponics Lab with 4th graders at Broadwater Academy in the month of November. Utilizing lesson plans and materials from Ag In the Classroom



“Test Tube Hydroponics” curriculum, Agents collaboratively had students work together to investigate the importance of nutrients for plant growth

and discover how plants grow without soil by growing and observing plants in a test tube hydroponic system. During observation weeks, the ANR Agent covered the scientific method and agriculture in the community, while the 4-H Agent covered parts of a flower with the students. For the final week, students went on a “virtual field trip” to a local hydroponic lettuce greenhouse.



Wanda & Theresa



Real Money. Real World. Making a Come Back

Northampton 4-H is excited to announce *Real Money. Real World.* finance education and simulation is coming back to Northampton High School this coming winter. This program geared toward ninth grade students provides a real world look at personal finances and budgeting. 4-H Agent Erin Morgan will spend several days in the classroom at both Broadwater and Northampton High School to assign careers with a monthly gross salary to the students. She will then assist the students in calculating standard deductions, such as taxes, social security, etc., out of their “paychecks”. This will provide the students with a net income to “spend” at a real-world simulation taking place on March 2, 2023 at Northampton High School.

Volunteers are needed to help run the stations during the simulation. The simulation will begin at 8:15am and end by 11:30am. **If you are able to volunteer your time during this event please contact Erin Morgan, Northampton 4-H Agent, at 757-678-7946 ext. 15 or by email emorgan2@vt.edu.**

Northampton 4-H Shooting Education

Northampton 4-H has a new shooting education club! The club led by Travis and Cindy Maynard and Taylor Dukes has had an overwhelming response of youth interested in participating. The club started by focusing on archery, and is gradually moving toward other shooting education disciplines. The club is focused on teaching youth the safety and proper handling of weapons as they assist youth in preparing for state wide shooting education competitions.

Currently, the club meets on Thursday nights and needs more volunteers who are interested in being trained to work with youth. If you are interested in learning more about this club or in serving as a volunteer please contact Erin Morgan, Northampton 4-H Agent, at 757-678-7946 ext. 15 or by email emorgan2@vt.edu or Cindy Maynard, club coordinator, by email cmaynard82@gmail.com.

-Erin



From The Eastern Shore AREC Director

Fall is marching on as we complete harvest, finish planting small grain research plots, and monitor cover crop establishment for our various species mixes. Among the field work being done, we're also busy with students as it's graduation season! Our faculty and staff at the Eastern Shore AREC serve not only the farming community, but train undergraduate and graduate students to prepare the future workforce for the agricultural and scientific communities.



Keren Brooks, Ph.D. student

Ms. Keren Brooks, Ph.D. student in Dr. Mark Reiter's Soils and Nutrient Management Group at the Eastern Shore AREC, defended her Ph.D. dissertation titled, "Nitrogen and Sulfur Management in Soybean and Edamame Production in the Mid-Atlantic Coastal Plain" on November 15, 2022 in Blacksburg, VA. Ms. Brooks' work focused on sandy loam production systems that will directly benefit our Eastern Shore and other growers interested in monitoring their sulfur and nitrogen fertility for soybean (both vegetable and oilseed) across Virginia. Ms. Brooks will continue with her love of teaching nutrient management, crop judging, and agronomy as she moves into the next stage of her career. You can read more about Keren's project in the abstract included with this newsletter.

Mr. Vipin Kumar, M.S. student in Dr. Vijay Singh's Weed Science Group at the Eastern Shore AREC, defended his M.S. thesis titled, "Management of Cover Crops and their Volunteers in Corn" on November 18, 2022 in Painter, VA. Mr. Kumar's work aimed to improve our control of cover crops that work well for soil coverage, nutrient banking, and soil health improvement, but can be difficult to kill and control in subsequent crops if seed escape. Mr. Kumar will continue his education by moving to the University of Nebraska Lincoln to work with Dr. Amit Jhala on planting green cover crops and to study pollen mediated gene transfer between crops and weed species. Please see the included abstract to learn more about Vipin's work in Virginia.

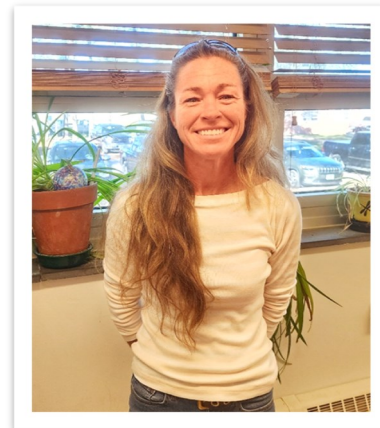


Vipin Kumar, M.S. student

Many of you will notice changes within our front office staff over the next few months. We are saddened that Ms. Lauren Seltzer has accepted a new position with the Virginia Department of Health as a Business Manager for the Eastern Shore Health District. Lauren has served as the Executive Secretary at the Eastern

From The ESAREC Director Continued

Shore AREC since April 2005 and has seen many personnel changes cycle through our doors as students graduate and faculty/staff retire or move-on to various positions across the country. Lauren assisted with many daily operational tasks that included working with 18 different Virginia Tech systems, managing our internal and external funding accounts, assisting with information technology (IT) support, managing our human resources, among many other operational tasks. Most importantly, Lauren was a friend and colleague that could be counted-on to ensure we continued our mission of serving growers, our community, and other stakeholders across Virginia. We wish Lauren well as she takes on this next step in her career.



*Lauren Seltzer , former
Exec. Secretary Sr.*



Keren Brooks, Ph.D. student

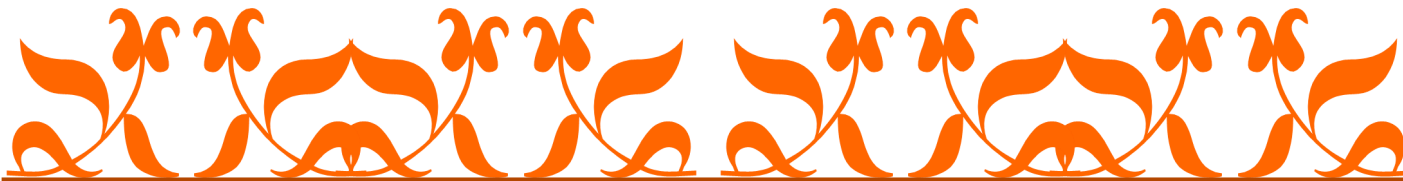
Ms. Keren Brooks recently competed in the American Society of Agronomy, Crop Science Society of America, and Soil Science Society of America International Meetings in Baltimore, MD. Ms. Brooks won 3rd place in the Ph.D. competition for the Soil Fertility & Plant Nutrition Division with her presentation titled, “Plant-Soil Interaction in Sulfur Fertilized Soybean.” Thank you to the Virginia Soybean Board for sponsoring Keren’s work to make her presentation possible!

In Memoriam

It is with heavy hearts that we share the news of Mr. James “Jimmy” Burrus’ passing. Jimmy worked at the Eastern Shore AREC for over 11 years as our janitorial staff, only recently retiring in July 2022. Jimmy was a wonderful colleague and friend and will be greatly missed. To read more about Jimmy’s life, please visit: <https://www.doughtyfuneralhome.com/obituary/James-Burrus>

— *Mark*





Nitrogen and Sulfur Management in Soybean and Edamame Production in the Mid-Atlantic Coastal Plain

Keren Ruth Brooks

ABSTRACT

The United States is the world leader of soybean [*Glycine max* (L.) Merr.] production, but to maintain quality production at this level, soybean management needs to be continually monitored and improved. Sulfur (S) deficiencies in soybean have become more frequent in the U.S. due to fertilizer purity, emissions regulations, and higher yields. We completed a study for soybean grown in sandy loam soils in the mid-Atlantic coastal plain system to determine proper S fertilizer rate and application timing. While neither S rate nor application timing influenced yield, S treatments increased methionine concentration. Sulfur fertilization can improve soybean quality and may impact marketability. Another study was conducted to determine optimal source and rate of S application for soybeans in the Mid-Atlantic coastal plain system. While sulfur rate did not influence yield and fertilizer source responses were site-specific. Sulfur leaf tissue concentrations were directly related to S rate ($S \text{ concentration} = 0.004S \text{ rate} + 2.103$). Nutrient uptake responses to S fertility indicate the potential for S yield responses in the future when soils become S depleted and contain less available S. Soybean producers and retailers in the United States are interested in capitalizing on new edamame markets to provide a domestic product. To aid the shift from oilseed production to vegetable production, a study was conducted to determine the optimal N rate and N application timing for edamame yield and quality in the Mid-Atlantic coastal plain system. Nitrogen rate significantly increased yield one out of three years ($\text{Yield} = 29.9N \text{ Rate} + 3387$) when all N was applied at planting but was not significant with split applications. Fertilizer rate and timing did not impact edamame maturity or final pod/bean quality. N fertilizer applied at-planting may aid edamame yield and profit for sandy loam soils in the mid-Atlantic, USA. Currently, mid-Atlantic coastal plain soils, coupled with S deposition, are able to supply enough S for soybean growth and development, but without fertilization soybean soils are being mined of S and will eventually become depleted. Sulfur must be monitored if future deficiencies are to be avoided. Nitrogen fertilizers may improve yield in vegetable soybean production. Both oilseed and vegetable soybean farmers should continue to monitor soil nutrient levels to ensure proper nutrition for soybean growth and development.



Management of Cover Crops and their Volunteers in Corn

Vipin Kumar

ABSTRACT

Cover crops species vary in terms of biomass accumulation, extent of weed control and their impact on cash crop yield. Ineffective and delayed termination of these cover crops may lead to an issue of volunteerism. The volunteer cover crop plants act as weeds and may compete with main crop for resources. The volunteers potentially emerge over a longer period and may mix with other cover crops the following season, reducing selective control and beneficial effects of a particular species.

Studies were conducted from 2020-2022 to evaluate the effect of four commonly grown cover crop species, winter wheat (*Triticum aestivum* L.), cereal rye (*Secale cereal* L.), hairy vetch (*Vicia villosa* Roth) and rapeseed (*Brassica napus* L.), and four termination timings; 28, 14, 5 and 1 days before corn planting (DBP) on their biomass accumulation, weed control and corn yield. Results indicate that hairy vetch produced the highest biomass and provided greater control of summer annual grasses, small-seeded broadleaf and large-seeded broadleaf weeds. Biomass accumulation and extent of weed control increased with delaying cover crop termination, with 1 DBP producing the highest biomass. Corn yield was highest in hairy vetch plots and was lowest in rapeseed plots. Termination of cover crops 14 DBP planting increased corn yield by 12%; whereas termination at 1 DBP decreased corn yield by 15% as compared to no cover crop-no till plots.

Effective termination of cover crops is an important management consideration and information on termination efficiency can help in devising management plans. However, estimating herbicide efficacy is a tedious task and potential remote sensing technologies and vegetative indices (VIs) have not been explored for this purpose. Studies were conducted to evaluate different selective and non-selective herbicides, and roller crimper for cover crop termination and correlating vegetative indices (VI) with visible termination efficiency. Non-selective herbicides provided higher termination efficiency for all cover crops and compared to selective herbicides and roller crimper. The study highlighted the need for tank-mixing 2,4-D or glufosinate with glyphosate for termination instead of blanket application of glyphosate for all crops. Among VI, Green Leaf Index had the highest Pearson correlation coefficient for wheat ($r = -0.79$, $p = <0.0001$) and cereal rye ($r = -0.80$, $p = <0.0001$) with visible termination efficiency. Whereas, for rapeseed, Normalized Difference Vegetation Index (NDVI) had the highest correlation coefficient ($r = -0.66$, $p = <0.0001$). However, for hairy vetch none of the vegetative indices correlated significantly with visible termination efficiency.

Additional studies were conducted with four rapeseed termination timings 28, 14, 5 and 1 DBP, for evaluating the risk of volunteerism in corn and screening preemergence (PRE) and postemergence (POST) herbicides for the control of volunteer rapeseed plants. Results indicated that delaying rapeseed termination increased the number of volunteer rapeseed plants in corn, with 0, 5, 12 and 22 volunteer plants m^{-2} at 28, 14, 5 and 1 DBP. Among PRE herbicides, mesotrione, rimsulfuron and flumioxazin provided more than 95% volunteer rapeseed control at 28 days after herbicide application (DAA); whereas visible control for atrazine, isoxaflutole, metribuzin, and pyroxasulfone was 92-94%. Among POST herbicides, atrazine and glyphosate provided 99% control of rapeseed at 28 DAA, followed by glufosinate (89%). The current study indicated that the risk of volunteerism is pronounced in rapeseed compared with other cover crops but can be reduced significantly, if terminated effectively before plants start producing mature seeds or using corn herbicides at early stage.

Careers at Virginia Tech

Administrative and Office Specialist (Job no. 522715); work type: Staff

Eastern Shore AREC, Virginia Tech, in Painter, VA is searching for an Administrative and Office Specialist. This position will work within our main office and facilitate expenditures of grant and operational funds, reconcile payroll, serve as our human resources liason, and generally support operations within the Eastern Shore AREC. Excellent bookkeeping and clerical skills, strong written and oral communication skills, and knowledge of the Microsoft Office Suite are required. Shortlisting of candidates will start after December 15, 2022 and continue until the position is filled. Interested candidates please visit this link and apply online: <https://careers.pageuppeople.com/968/cw/en-us/job/522715/administrative-and-office-specialist>

Research Specialist Senior (Job no. 522566); work type: Staff

Eastern Shore AREC, Virginia Tech, Plant Pathology research group in Painter, VA, is searching for a Research Specialist Senior. The position will be primarily field based (establishment and maintenance of field trials, application of pesticides, collection of data and plant samples from field plots and grower fields) with a focus on vegetable (potatoes, green beans, sweet corn, and watermelon) and row (corn, soybean, and small grains) crops. There will also be lab (assist in the preparation of inoculum for field trials and isolation of pathogens from the field samples), office (preparation of field trial reports, organization and maintenance of inventory, budget and compliance records), and supervision (oversee part-time employees, assist on graduate student projects) responsibilities. A Bachelor's degree in a plant science related field (Agricultural Sciences, Crop and Soil Science, Horticulture, Plant Biology, Plant Pathology, Entomology, Weed Science) or a combination of education and extensive experience in a related field is required. Shortlisting of candidates will start after November 30, 2022 and continue until the position is filled. Interested candidates please visit this link and apply online: <https://careers.pageuppeople.com/968/cw/en-us/job/522566/research-specialist-senior>

Research Specialist (Job no. 520611); work type: Staff

Eastern Shore AREC, Virginia Tech, Horticulture research group in Painter, VA, has advertised a Research specialist position. A B.S. in plant sciences (horticulture/agronomy) with experience in operating farm equipment is desired. Candidates with a high school education with significant practical field experience will also be considered. Shortlisting of candidates will start after November 1, 2022 and continue until the position is filled. Interested candidates please visit this link and apply online: <https://careers.pageuppeople.com/968/cw/en-us/job/520611/research-specialist>

Insect Knowledge Quiz!

by Hélène Doughty



<https://forms.gle/zrZWGXnk4pk4Ao94A>

FULL COLD MOON



The full cold moon, a name given by the Mohawk, occurs on December 7th.

Celebrate the first day of winter, the Winter Solstice, on December 21st, which is the shortest day of the year. At noon on this day, you'll cast the longest shadow of the year.

Each month has a full moon theme and name, which is historically derived from Native Americans, Colonial or European sources, and used in the Old Farmer's Almanac.

INSPECTION CHECKLIST

The ACRC program accepts containers when all of the conditions and actions listed below have been met:

- ✓ **Containers:** Only rigid high density polyethylene (HDPE) are accepted. Some HDPE containers have a thin barrier of other co-manufactured material that is acceptable. Containers will be embossed with resin code #2, and sometimes #7.
- ✓ **Clean:** Only properly rinsed containers will be accepted into the recycling program. Rinse the container 3 times or pressure rinse immediately after it is emptied. Containers are much easier to clean if rinsed immediately after use. Add the rinse water to the spray tank.
- ✓ **Use:** The container originally held an EPA registered pesticide labeled for micronutrient, biologicals, fertilizer, animal health, agriculture, forestry, vegetative management, specialty pest control OR a non-EPA registered crop protection adjuvant, crop oil, or surfactant
- ✓ **Inspected:** Immediately after rinsing the container, look inside and make sure that all the formulation has been rinsed out. Also, inspect the outside of the container; particularly check that the pour spout, the spout threads and the container wall surrounding the spout are free of formulation residues that flake, smear or come off on a glove when touched. The recycler cannot process containers that have removable formulation in or on them.
- ✓ **Professional Use:** The contents of each container were used by a farmer, commercial applicator or a person under the direct supervision of a farmer or commercial applicator.
- ✓ **Stains:** Certain products discolor plastic with a penetrating stain. The stained containers are acceptable provided that no material can be smeared or removed when touched by a rubber glove.
- ✓ **Sizes:** Containers are accepted from the smallest sizes up to 55 gallons in capacity. For sizes greater than 55 gallons in capacity, contact the collection site or the ACRC contractor.
- ✓ **Booklet/Label:** Booklets must be removed. The pressure sensitive label (base label) that adheres to the container may remain as some states require it to remain on the container.
- ✓ **Empty:** Containers must be empty to be recycled in the ACRC program. No dried on residue inside or outside the container, including the mouth of the container. Puncture the bottom of the container to insure no rinsate remains
- ✓ **Dry:** An acceptable container is a dry container. Store cleaned containers in an enclosed building or trailer or in plastic bags. The recycler will not accept a container that has liquid in it.
- ✗ Containers that originally held consumer products, or home and garden pesticides are **NOT ACCEPTABLE**.

CLEAN means CLEAN

- INSIDE AND OUTSIDE -

TRIPLE RINSED means TRIPLE RINSED

- NOT ONCE OR TWICE -

Compare your containers with the examples shown below.



Always follow the instructions on the label before handling any crop protection products. Wear the proper protective equipment as specified on the product label.

ACCEPTABLE



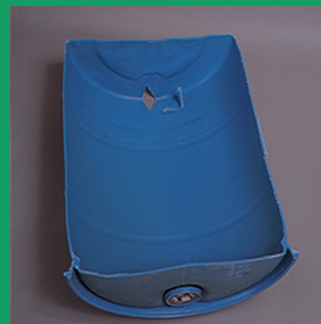
Container, thread, and lip are clean



Handle and neck stained but clean



Inside stained but rinsed clean



Inside is clean and dry

NOT ACCEPTABLE



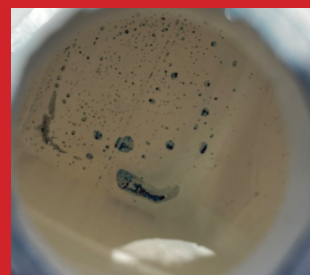
Dried formula on container



Dried formulation on thread



Liquid residue in container



Bottom caked with dried residue

PO Box 1928, Apex, North Carolina 27502 | 877.952.2272 | info@agrecycling.org | agrecycling.org

ACRC is a non-profit organization whose purpose is to develop and support the collection and recycling of properly rinsed HDPE plastic crop protection, animal health, specialty pest control, micronutrient, biologicals, fertilizer, and adjuvant containers.

Virginia Cooperative Extension

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16392 Courthouse Rd
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Eastville, VA 23347
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Accomack County
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PO Box 60
Accomac, VA 23301
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Virginia Cooperative Extension brings the resources of Virginia's land-grant universities, Virginia Tech and Virginia State University, to the people of the commonwealth. VCE provides education through programs in Agriculture and Natural Resources, Family and Consumer Sciences, 4-H Youth Development and Community Viability.

Eastern Shore Agricultural Research and Extension Center

33446 Research Dr
Painter, VA 23420
757-807-6586



<https://www.ares.vaes.vt.edu/ares/eastern-shore.html>

The Virginia Tech, Eastern Shore AREC is committed to supporting commercial vegetable, grain, oilseed, and fiber production throughout the Commonwealth of Virginia. Centrally located on Virginia's Eastern Shore, the center conducts basic and applied research on more than 25 agricultural crops.



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Virginia Cooperative Extension is a partnership of Virginia Tech, Virginia State University, the U.S. Department of Agriculture, and local governments. Its programs and employment are open to all, regardless of age, color, disability, gender, gender identity, gender expression, national origin, political affiliation, race, religion, sexual orientation, genetic information, military status, or any other basis protected by law.

If you are a person with a disability and desire any assistive devices, services or other accommodations to participate in any activity, please contact Amanda Hurley at 757-678-7946 (*TDD number is (800) 828-1120) during business hours of 8:00 a.m. and 4:30 p.m. to discuss accommodations.*



VIRGINIA AGRICULTURAL EXPERIMENT STATION
EASTERN SHORE AGRICULTURAL
RESEARCH AND EXTENSION CENTER
VIRGINIA TECH.

